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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,432	09/13/2005	Giacomo Gasparini	0184-0163PUS1	5781
2292 7590 06/21/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER BUSHEY, CHARLES S	
			ART UNIT 1724	PAPER NUMBER
			NOTIFICATION DATE 06/21/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/525,432

Applicant(s)

GASPARINI ET AL.

Examiner

Scott Bushey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-36, 38-41 and 43-45 is/are rejected.
- 7) ☒ Claim(s) 37 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2-24-05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed February 24, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Applicant should note that a copy of GB 1,455,544, as cited on the IDS in question has been obtained by the Examiner and has been considered as noted on the IDS attached hereto. However, copies of the other foreign documents cited on the IDS filed February 24, 2005 have not been received and are not readily available to the Examiner and therefore they have not been considered at this time. Applicant should further note that the ** notation on the IDS pertains to documents that were cited previously to the USPTO in an earlier filed application filed under 35 USC 120. Such does not apply in this case, since the earlier filing was an international application filed in Australia from which the instant application is a national stage filing under 35 USC 371. Since the international bureau has not supplied copies of the references, applicant is asked to submit such in response to this Office action, so that they may be properly considered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the impeller placement

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within the tower as set forth by instant claims 28 and 34 must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because the drawings shown on pages 1-3, 5, and 6 of the drawings are not designated with a "Figure No.". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or

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remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Specification

5. The disclosure is objected to because of the following informalities: In the specification, on pages 8 and 9, respectively, it is stated "shaft 29 (not shown)", and "drive shaft 35 (not shown)", which is correct since neither of the reference numerals appear in the drawings. Accordingly, at page 8, line 23, page 9, lines 14-19, and on

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page 12, line 16, reference numerals 29 and 35 should be deleted wherever they appear.

Appropriate correction is required.

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The language of claim 43, while appearing in original claim 22, does not appear within the specification.

Claim Objections

7. Claim 25 is objected to because of the following informalities: On line 17 of claim 25, the period after "passage" should be replaced by either a comma or semi-colon, since claim 25 does not end at line 17 thereof. Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. Claims 38, 44 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 38, as currently recited, depends from itself, which renders the claim vague and indefinite. In light of the language of instant claim 38, i.e., "further position", it appears that claim 38 should depend from claim 37. As such, claim 38 has been treated below, with respect to the prior art rejections, as if it were dependent upon claim 37.

Claims 44 and 45, both of which depend from independent claim 30, fail to further limit either the apparatus of claim 30, with respect to claim 44, or a method of

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operating the apparatus of claim 30, with respect to claim 45. Specifically, claim 44 appears to simply repeat language that already appears in claim 30. With regard to claim 45, the only conceivable method step stated thereby simply states, "operating said apparatus", which fails to specify a manipulative step in such a manner as to allow one of ordinary skill in the art to ascertain the metes and bounds of the patent protection desired.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 25, 27, 30, 33, 36, 41, 44, and 45 are rejected under 35 U.S.C. 103(a) as being unentable over GB 1 455 544 taken in view of any one of Fiss, Agsten, JP 52-26043; JP 54-109543, and DE 3825957 A1.

GB 1 455 544 (Figs. 1 and 2; page 1, lines 72-95; page 2, lines 104-107; page 3, lines 25-37, 49-55) discloses a natural draft cooling tower, wherein at least one fan (page 1, line 81) is provided to enhance air movement through the cooling tower, thus enhancing the cooling capacity thereof. The British reference further discloses that there is no reason to limit the size of the fan, since it is out of the influence of the atmospheric wind and noise caused by a larger fan would be confined to the interior of the cooling tower. The reference fails to specifically suggest use of a fan sized and located so as to fill virtually the entire inner diameter of the cooling tower, the drive shaft thereof being arranged along the central longitudinal axis of the tower.

Any one of Fiss (Figs. 2 and 3), Agsten (Figs. 1, 3, and 7), JP 52-26043 (Fig. 1), JP 54-109543 (Fig. 1), and DE 3825957 A1 (Fig. 1) alternatively disclose large natural draft cooling towers having a single centrally located impeller within the throat of the hyperbolic walls of the cooling tower. In view of the suggestion by the primary reference that the fan size is not limited due to its protected placement within the interior of the cooling tower walls, it would have been obvious for an artisan at the time of the invention, to provide the driven fan means of the primary reference in the form of a single, centrally located fan structure, that virtually spans the entire inner diameter of the cooling tower, in view of any one of the alternative secondary references, since such would preclude the formation of eddy currents within the tower confines, thereby preventing undesirable recirculation of exhaust air back into the cooling tower.

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12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over the reference combination as applied to claims 25, 27, 30, 33, 36, 41, 44, and 45 above, and further in view of the admitted prior art.

The reference combination as applied to claims 25, 27, 30, 33, 36, 41, 44, and 45 above substantially discloses applicant's invention as recited by instant claim 40, except for the end plates on the ends of the rotor blades.

Applicant admits, at page 12, line 9 of the instant application that use of such end blades is conventional within the art. Accordingly, it would have been obvious for an artisan at the time of the invention, to provide the fan blades of the apparatus as suggested by the reference combination as applied to claims 25, 27, 30, 33, 36, 41, 44, and 45 above, with end plates, in view of the well known use of such within the art of endeavor, since such would protect the tower walls in a manner well understood in the art.

13. Claims 26, 28, 29, 31, 32, 34, 35, 39, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1 455 544 taken in view of Agsten.

GB 1 455 544 (Figs. 1 and 2; page 1, lines 72-95; page 2, lines 104-107; page 3, lines 25-37, 49-55) as applied above substantially discloses applicant's invention as recited by instant claims 26, 28, 29, 31, 32, 34, 35, 39, and 43, except for fan being supported by a foundation of the cooling tower, as recited by claims 26 and 31, the specific placement of the fan within the tower, as recited by claims 28, 29, 34, and 35, the protection means on the tower wall, as recited by claim 39, and the fan being used to generate electricity, as recited by claim 43.

Agsten (Abstract; Figs. 1, 3, and 7) clearly disclose the fan assembly (14,20) being supported by the foundation of the cooling tower under support shaft (24), and the rotor (20) being used to generate electricity when the rotor is driven by the natural draft of the airflow through the tower. Agsten also discloses (Abstract; Figs. 1 and 7) placement of the fan rotor either at the throat of the tower or below the minimum diameter throat of the tower. Lastly, Agsten teaches a bulge (43 in Fig. 3) that protects the underlying tower wall from erosion by liquid droplets that are slung from the spinning rotor blades. It would have been obvious for an artisan at the time of the invention, to support the large diameter rotor blades of the fan as suggested by the British reference, via the foundation, in view of Agsten, since such would not place undue strain on the walls of the cooling tower, especially a cooling tower that was being retrofitted with a fan and was not originally constructed with tower walls strong enough to carry the large rotor. Further, it would have been obvious for an artisan at the time of the invention, to place the fan as suggested by the primary reference, at any height within the tower at or below the minimum diameter throat, in view of Agsten, since such would insure a strong, non-recirculating flow from the tower. It would have also been obvious for an artisan at the time of the invention, to protect the walls of the tower as suggested by the primary reference, by providing a thickened portion of tower wall where the rotor would fling liquid droplets at high velocity, in view of Agsten, since such would insure against deterioration of the tower through a simple, inexpensive means. Lastly, in view of the fact that both references are concerned with improving the efficiency of the known cooling tower, it would have been obvious for an artisan at the time of the invention, to

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operate the fan of the primary reference as an electricity generator, in view of Agsten, in those situations when the natural draft was so strong as to rotate the fan blades without external energy input.

14. Claims 28, 34, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1455 544 taken in view of Fiss.

GB 1 455 544 (Figs. 1 and 2; page 1, lines 72-95; page 2, lines 104-107; page 3, lines 25-37, 49-55) except for the specific placement of the fan within the tower, as recited by claims 28 and 34, and the fan being used to generate electricity, as recited by claim 43.

Fiss (Abstract; Figs. 2 and 3) discloses (Fig. 2) placement of the fan rotor at the minimum diameter throat of the tower, and the rotor being used to generate electricity when the rotor is driven by the natural draft of the airflow through the tower (see Abstract). It would have been obvious for an artisan at the time of the invention, to place the fan as suggested by the primary reference, at the minimum diameter throat within the tower, in view of Fiss, since such would insure a strong, non-recirculating flow from the tower. Lastly, in view of the fact that both references are concerned with improving the efficiency of the known cooling tower, it would have been obvious for an artisan at the time of the invention, to operate the fan of the primary reference as an electricity generator, in view of Fiss, in those situations when the natural draft was so strong as to rotate the fan blades without external energy input.

Allowable Subject Matter

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15. Claims 37 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claim 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 38 would only be considered allowable if rewritten including the limitations of instant claim 37, from which it apparently should depend. Note the discussion in paragraph 8 above.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Bushey
Primary Examiner
Art Unit 1724



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